

REMARKS/ARGUMENTS

Reconsideration of the application is requested.

Claims 1-12 are now in the application. Claims 1-4, 6, and 8 have been amended. Claims 11-12 have been added.

In the first paragraph on page 2 of the above-identified Office action, claims 1-4 have been rejected as being indefinite under 35 U.S.C. § 112, second paragraph.

More specifically, the Examiner has stated that the limitation of an element for carrying an electrostatic discharge away from the terminal for the signal and to the supply potential, as recited in claim 1, is unclear as to what is meant by the phrase "for the signal and to the supply potential."

The rejection is not understood. The language appears to clearly recite an element (32) that carries an electrostatic discharge away from the terminal (15) for the signal (DQ1) to the supply potential (GND).

It is accordingly believed that the claims meet the requirements of 35 U.S.C. § 112, second paragraph. Should the Examiner find any further objectionable items, counsel would

appreciate a telephone call during which the matter may be resolved.

In the last paragraph on page 2 of the above-mentioned Office action, claims 1 and 4-10 have been rejected as being unpatentable over Chrysostomides et al. (US Pat. No. 5,646,434) under 35 U.S.C. § 103(a).

In the first paragraph on page 6 of the above-mentioned Office action, claim 2 (incorrectly referred to by the Examiner as claim 3) has been rejected as being unpatentable over Chrysostomides et al. in view of Kohama (US Pat. No. 5,917,362) under 35 U.S.C. § 103(a).

In the third paragraph on page 7 of the above-mentioned Office action, claim 3 has been rejected as being unpatentable over Chrysostomides et al. in view of Reczek et al. (US Pat. No. 5,426,323) under 35 U.S.C. § 103(a).

As will be explained below, it is believed that the claims were patentable over the cited art in their original form and the claims have, therefore, not been amended to overcome the references. However, the language of claim 1 has been modified in an effort to even more clearly define the invention of the instant application.

Before discussing the prior art in detail, it is believed that a brief review of the invention as claimed, would be helpful.

Claim 1 calls for, inter alia:

a further conductor track running outside said semiconductor chip, said further conductor track connected to said second conductor track;

said electrostatic discharge protection element being disposed outside of said semiconductor chip; and

said electrostatic discharge protection element being connected outside of said semiconductor chip to said further conductor track and to said first conductor track.

In Fig. 5 of Chrysostomides et al., all elements except pins 5, 10 and bonding wires 6, 7, 8, 9 are integrated on an integrated semiconductor circuit chip. In Particular, the electrostatic discharge protection elements are integrated on the chip (see, for example, column 1, lines 39-42). Although it is not explicitly mentioned in Chrysostomides et al. that the supply line VCC1, the track 24 (for VCC1) and the track 23 (for VCC2) are integrated on the circuit chip, it corresponds to the thinking of the technical experts before the invention of the instant application was made that as many elements as possible should be integrated on a semiconductor chip to obtain a concise and effective circuit. In Chrysostomides et al., only the pins and the bonding wires are outside the chip.

In contrast, in the invention of the instant application, the electrostatic discharge protection element (32, 33) and the further conductor track (3) are disposed outside the semiconductor chip. This means that they are not integrated on the semiconductor chip. This is different from Chrysostomides et al. where the supply lines VCC1, VSS1 and VSS2 as well as the protection elements 13, 16 are integrated within the same chip.

In Chrysostomides et al. the expression "semiconductor body" is provided with two different meanings. Semiconductor body may be, according to Chrysostomides et al., a semiconductor chip (see column 1, line 11). The element 30 is also called a semiconductor body (see column 5, line 25). However, the element 30 is realized as a switch or diode (see column 5, lines 52-52) rather than being a semiconductor chip carrying an integrated circuit. The comparison between the element 30 of Chrysostomides et al. and the semiconductor body or semiconductor chip (1) according to the invention of the instant application is formalistic and, in fact, both elements, although carrying the same name, refer to different technical elements (switch or diode 30 in Chrysostomides et al. and integrated semiconductor chip (1) in the invention of the instant application).

Since Chrysostomides et al. desire to include the electrostatic discharge protective elements within the semiconductor chip (see column 1, lines 39-42), it is not obvious to depart from this thinking and arrange any tracks and elements in Chrysostomides et al. outside the semiconductor chip.

The other cited references also refer to integrated circuits and conductor lines as well as electrostatic discharge protection elements, which are integrated on a semiconductor chip.

It is noted that the Examiner has read the first conductor track 15 of the invention of the instant application on the track VCC1 of Chrysostomides et al., the second conductor track 16 of the invention on the track 24 of Chrysostomides et al., and the further conductor track 3 of the invention on the track 23 of Chrysostomides et al. However, the electrostatic discharge protection element 16 of Chrysostomides et al. is connected between the line 14 and the track 23, but not connected to the conductor track VCC1 as asserted by the Examiner in the last paragraph on page 3 of the Office action.

It is accordingly believed to be clear that none of the references, whether taken alone or in any combination, either show or suggest the features of claim 1. Claim 1 is, therefore, believed to be patentable over the art and since all of the dependent claims are ultimately dependent on claim 1, they are believed to be patentable as well.

Claims 11-12 have been added. Since claims 11-12 are dependent on claim 1, which is believed to be patentable as discussed above, they are believed to be patentable as well. The support for claims 11-12 may be found on page 10, lines 6-7 and 15, page 11, line 17, and page 13, lines 12-13 of the specification.

With regard to claims 11 and 12, it is noted that the electrostatic discharge protection element 16 (to which the line 14 is connected) and the track 23 in Chrysostomides et al. are integrated on the semiconductor chip. In contrast, in the invention of the instant application, the electrostatic discharge protection element (32) is connected to the further conductor track (3) and a portion of a leadframe (15). The leadframe is further connected through a bonding wire (18) to pad (11) which leads to the track (133). The leadframe is not of concern in Chrysostomides et al.

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It is also noted that the line 14 of Chrysostomides et al. is not a portion of a leadframe. In addition, in Chrysostomides et al. the bonding wires 6, 7, 8, 9 are connected to different elements than the line 14 (which is comparable to the line 133 of the invention of the instant application).

In view of the foregoing, reconsideration and allowance of claims 1-12 are solicited.

In the event the Examiner should still find any of the claims to be unpatentable, counsel would appreciate a telephone call so that, if possible, patentable language can be worked out.

If an extension of time for this paper is required, petition for extension is herewith made. Please charge any fees which might be due with respect to 37 CFR Sections 1.16 and 1.17 to the Deposit Account of Lerner and Greenberg, P.A., No. 12-1099.

Respectfully submitted,

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